



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,540	02/11/2004	Koji Washio	04085 /LH	5131
1933 7590 06/12/2007 FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 Fifth Avenue 16TH Floor NEW YORK, NY 10001-7708			EXAMINER TYLER, NATHAN K	
			ART UNIT 2625	PAPER NUMBER
			MAIL DATE 06/12/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/777,540	Applicant(s) WASHIO ET AL.	
	Examiner Nathan K. Tyler	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The examiner suggests "Image process apparatus having block average process unit."

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Takano et al. (US 6922262 B2).

Regarding **claim 1**, Takano discloses a halftone process section (Fig. 11, "Pattern selecting processor") for performing a halftone process on image data input from an image

Art Unit: 2625

reading device which reads a document image (Fig. 2, numeral 4 “Scanner”); and a block average process section (Fig. 11, numeral 96d “Block averaging”), wherein the halftone process section generates a continuous pattern in a fashion of a line structure by performing a dither process on the image data input (see Fig. 6, Takano generates a line structure in the vertical (y) direction), and the block average process section divides the image data input into a plurality of blocks whose centers approximately correspond to a centerline of the line structure generated by the halftone process section (Fig. 6, the centerline is the line traveling through the center of the halftone cells (halftone cells outlined with heavy solid line). The center of each block to be averaged (blocks outlined with dashed line) is aligned with this centerline), calculates an average value of pixel values in each block (“The averaging unit 212 averages the input image signals P_{in} in a predetermined rectangular block” at column 10, line 23), and replaces the pixel values in each block with the average value calculated (“The averaging unit 212 averages the input image signals P_{in} in a predetermined rectangular block, and stores an average value as the image signal of each pixel of the block again in the work memory 209” at column 10, line 23).

Regarding **claim 3**, Takano discloses that the block average process section calculates the average value according to the pixel values in each block only (“The averaging unit 212 averages the input image signals P_{in} in a predetermined rectangular block” at column 10, line 23), and replaces the pixel values in each block with the average value calculated (“The averaging unit 212 averages the input image signals P_{in} in a predetermined rectangular block, and stores an average value as the image signal of each pixel of the block again in the work memory 209” at column 10, line 23).

Regarding **claim 4**, Takano discloses a halftone process section (Fig. 11, “Pattern selecting processor”) for performing a halftone process on image data input from an image reading device which reads a document image (Fig. 2, numeral 4 “Scanner”); and a block average process section (Fig. 11, numeral 96d “Block averaging”), wherein the halftone process section generates a continuous pattern in a fashion of a line structure by performing a dither process on the image data input (see Fig. 6, Takano generates a line structure in the vertical (y) direction), and the block average process section divides the image data input into a plurality of blocks so as to make a cycle structure of the plurality of blocks correspond to a cycle structure of the pattern generated by the halftone process section (Applicant’s Fig. 2B shows a 3 pixel “cycle structure.” In Takano Fig. 6, both the halftone cell and average block have a 4 pixel cycle structure, in that each is 4 pixels wide and repeats every 4 pixels), calculates an average value of pixel values in each block (“The averaging unit 212 averages the input image signals Pin in a predetermined rectangular block” at column 10, line 23), and replaces the pixel values in each block with the average value calculated (“The averaging unit 212 averages the input image signals Pin in a predetermined rectangular block, and stores an average value as the image signal of each pixel of the block again in the work memory 209” at column 10, line 23).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Takano et al. and Kimura (US 5134503 A).

Regarding **claim 2**, while Takano discloses the limitations of claim 1, from which claim 2 depends, Takano does not disclose that the block average process section calculates a weighting average value according to the pixel values in each block and pixel values around each block, and replaces the pixel values in each block with the weighting average value calculated.

Kimura discloses an image processing apparatus including an averaging circuit (Fig. 2, numeral 30 "Smoothing Circuit." "The smoothing circuit 30 applies an averaging operation on the input image data" at column 5, line 4), which calculates a weighting average value according to a pixel value and pixel values surrounding each pixel ("The smoothing circuit 30 applies an averaging operation on the input image data of the current pixel and image data of its surrounding pixels" at column 5, line 4), and replaces the pixel values in each one pixel block with the weighting average value calculated ("...and outputs a compensated image data" at column 5, line 8).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to additionally use the surrounding pixels when calculating the average as taught by

Kimura in the block averaging circuit taught by Takano, so that the block average process could remove noise from the source image without reducing the sharpness of the image ("By applying a weighting operation according to an equation using the average data (obtained using the current image data and the surrounding pixels), the input image data, and the determined weighting coefficient, the noise can be satisfactorily reduced over a wide range of regions, from shadow areas with high density to highlight areas with low density, specifically, there is no resultant deterioration of the sharpness of the edges in high density regions and images with gradually changing densities do not turn out having an unnatural quality." at column 2, line 28).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan K. Tyler whose telephone number is 571-270-1584. The examiner can normally be reached on M-F 7:30am - 5:00pm.

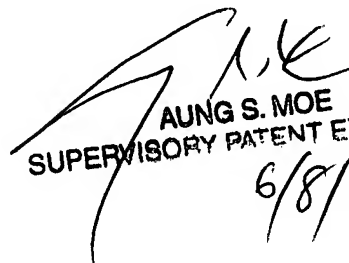
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on 571-272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2625

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Nathan K Tyler
Examiner
Art Unit 2625



AUNG S. MOE
SUPERVISORY PATENT EXAMINER
6/8/02